

## Classifier Weka Repot

The classifying part of the project is a lot different from the Cluster report in that time is spent more on figuring out Weka and finding actual classification. Originally I used the same preprocessed dataset as before in the Clustering Report. It was narrowed down from 79 attributes to 34 attributes. Afterwards, most of the tree algorithms are grayed out. I applied “Discretize” filter to the attributes, opening up to new options. When I ran the SimpleCart attribute never finished running after 3 hours. With advice from Yong, I edited the arff file and reduced the data set from 99999 to 29989 and ran the same classification algorithm. First is the ZeroR, and then SimpleCart.

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=== Run information ===

```
Scheme:      weka.classifiers.rules.ZeroR
Relation:    train-a-weka.filters.unsupervised.attribute.Remove-R1-weka.filters.unsupervised.attribute.Remove-R55-69-weka.filters.unsupervised.attribute.Remove-R16-29-weka.filters.unsupervised.attribute.Remove-R17-30-weka.filters.unsup
Instances:    29989
Attributes:   34
    PatientID
    Record Count
    Interval
    Patient-Sex
    Age
    Patient-Race
    Patient-Ethnicity
    Patient-Disposition
    Length of Stay
    Admit-Type
    Admit-Source
    Hospital-ID
    Region-ID
    Principal-Dx-Code
    Admit-Dx-Code
    Principal-PR-Code
    Cause-E-Code
    Place-E-Code
    Reimb DRG
    Reimb MDC
    AccomCharges
    AncilCharges
    TotalCharges
    Serv-Class
    Emergency-Dept-Ind
    Pot Amb
    Complication-Minor
    Complication-Sever
    Trauma-Minor
    Trauma-Severe
    Trauma-Severity
    Nosocomial Inf
    Severity
    Cost Weight
Test mode:   evaluate on training data

=== Classifier model (full training set) ===

ZeroR predicts class value: E8788

Time taken to build model: 0.01 seconds
```

=== Evaluation on training set ===

=== Summary ===

|                                  |        |           |
|----------------------------------|--------|-----------|
| Correctly Classified Instances   | 583    | 13.0367 % |
| Incorrectly Classified Instances | 3889   | 86.9633 % |
| Kappa statistic                  | 0      |           |
| Mean absolute error              | 0.0073 |           |
| Root mean squared error          | 0.0605 |           |
| Relative absolute error          | 100    | %         |
| Root relative squared error      | 100    | %         |
| Total Number of Instances        | 4472   |           |
| Ignored Class Unknown Instances  | 25517  |           |

=== Detailed Accuracy By Class ===

| TP Rate | FP Rate | Precision | Recall | F-Measure | ROC Area | Class |
|---------|---------|-----------|--------|-----------|----------|-------|
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8859 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8120 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8843 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8781 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8801 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8844 |
| 1       | 1       | 0.13      | 1      | 0.231     | 0.5      | E8788 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8782 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8798 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8790 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E887  |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8796 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8704 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8780 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8889 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8786 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E9299 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8888 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E9000 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8582 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8785 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E9289 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E9293 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8789 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E927  |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8881 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E9173 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8783 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E915  |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E9505 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8791 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8842 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8792 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8543 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E9208 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E9290 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8809 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E9250 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E8768 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E9504 |
| 0       | 0       | 0         | 0      | 0         | 0.5      | E9240 |

|               |      |      |       |      |      |     |       |
|---------------|------|------|-------|------|------|-----|-------|
|               | 0    | 0    | 0     | 0    | 0    | ?   | E8658 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E8654 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E9258 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E9191 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E8257 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E8852 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E995  |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E9294 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E9177 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E8683 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E9674 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E8506 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E972  |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E9291 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E8738 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E9232 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E8251 |
|               | 0    | 0    | 0     | 0    | 0    | ?   | E961  |
| Weighted Avg. | 0.13 | 0.13 | 0.017 | 0.13 | 0.03 | 0.5 |       |

[illegible]

I ran SimpleCart on the Trauma-Severity.

=== Run information ===

```
Scheme:      weka.classifiers.trees.SimpleCart -S 1 -M 2.0 -N 5 -C 1.0
Relation:    train-a-weka.filters.unsupervised.attribute.Remove-R1-weka.filters.unsupervised.attribute.
Instances:   29989
Attributes:  34
             PatientID
             Record Count
             Interval
             Patient-Sex
             Age
             Patient-Race
             Patient-Ethnicity
             Patient-Disposition
             Length of Stay
             Admit-Type
             Admit-Source
             Hospital-ID
             Region-ID
             Principal-Dx-Code
             Admit-Dx-Code
             Principal-PR-Code
             Cause-E-Code
             Place-E-Code
             Reimb DRG
             Reimb MDC
             AccomCharges
             AncilCharges
             TotalCharges
             Serv-Class
             Emergency-Dept-Ind
             Pot Amb
             Complication-Minor
             Complication-Sever
             Trauma-Minor
             Trauma-Severe
             Trauma-Severity
             Nosocomial Inf
             Severity
             Cost Weight
Test mode:   2-fold cross-validation
```

=== Classifier model (full training set) ===

CART Decision Tree

```
Trauma-Severity=(' (0.9-1.2]'): ' (0.9-1.2]' (286.0/18.0)
Trauma-Severity!=(' (0.9-1.2]'): ' (-inf-0.3]' (29601.0/84.0)
```

Number of Leaf Nodes: 2

Size of the Tree: 3

Time taken to build model: 122.95 seconds

=== Stratified cross-validation ===



=== Classifier model (full training set) ===

CART Decision Tree

Trauma-Severity=(' (0.9-1.2]'): ' (0.9-1.2]' (286.0/18.0)

Trauma-Severity!=(' (0.9-1.2]'): ' (-inf-0.3]' (29601.0/84.0)

Number of Leaf Nodes: 2

Size of the Tree: 3

Time taken to build model: 122.95 seconds

=== Stratified cross-validation ===

=== Summary ===

|                                  |           |           |
|----------------------------------|-----------|-----------|
| Correctly Classified Instances   | 29887     | 99.6599 % |
| Incorrectly Classified Instances | 102       | 0.3401 %  |
| Kappa statistic                  | 0.851     |           |
| Mean absolute error              | 0.0013    |           |
| Root mean squared error          | 0.0259    |           |
| Relative absolute error          | 25.6858 % |           |
| Root relative squared error      | 51.2679 % |           |
| Total Number of Instances        | 29989     |           |

=== Detailed Accuracy By Class ===

|               | TP Rate | FP Rate | Precision | Recall | F-Measure | ROC Area | Class         |
|---------------|---------|---------|-----------|--------|-----------|----------|---------------|
|               | 1       | 0.216   | 0.997     | 1      | 0.999     | 0.888    | ' (-inf-0.3]' |
|               | 0       | 0       | 0         | 0      | 0         | ?        | ' (0.3-0.6]'  |
|               | 0       | 0       | 0         | 0      | 0         | ?        | ' (0.6-0.9]'  |
|               | 0.79    | 0.001   | 0.941     | 0.79   | 0.859     | 0.892    | ' (0.9-1.2]'  |
|               | 0       | 0       | 0         | 0      | 0         | ?        | ' (1.2-1.5]'  |
|               | 0       | 0       | 0         | 0      | 0         | ?        | ' (1.5-1.8]'  |
|               | 0       | 0       | 0         | 0      | 0         | 0.845    | ' (1.8-2.1]'  |
|               | 0       | 0       | 0         | 0      | 0         | ?        | ' (2.1-2.4]'  |
|               | 0       | 0       | 0         | 0      | 0         | ?        | ' (2.4-2.7]'  |
|               | 0       | 0       | 0         | 0      | 0         | 0.253    | ' (2.7-inf)'  |
| Weighted Avg. | 0.997   | 0.214   | 0.996     | 0.997  | 0.996     | 0.888    |               |

=== Confusion Matrix ===

|       | a | b | c | d   | e | f | g | h | i | j | <-- classified as |
|-------|---|---|---|-----|---|---|---|---|---|---|-------------------|
| 29601 | 0 | 0 | 0 | 0   | 0 | 0 | 0 | 0 | 0 | 0 | a = ' (-inf-0.3]' |
| 0     | 0 | 0 | 0 | 0   | 0 | 0 | 0 | 0 | 0 | 0 | b = ' (0.3-0.6]'  |
| 0     | 0 | 0 | 0 | 0   | 0 | 0 | 0 | 0 | 0 | 0 | c = ' (0.6-0.9]'  |
| 76    | 0 | 0 | 0 | 286 | 0 | 0 | 0 | 0 | 0 | 0 | d = ' (0.9-1.2]'  |
| 0     | 0 | 0 | 0 | 0   | 0 | 0 | 0 | 0 | 0 | 0 | e = ' (1.2-1.5]'  |
| 0     | 0 | 0 | 0 | 0   | 0 | 0 | 0 | 0 | 0 | 0 | f = ' (1.5-1.8]'  |
| 7     | 0 | 0 | 0 | 18  | 0 | 0 | 0 | 0 | 0 | 0 | g = ' (1.8-2.1]'  |
| 0     | 0 | 0 | 0 | 0   | 0 | 0 | 0 | 0 | 0 | 0 | h = ' (2.1-2.4]'  |
| 0     | 0 | 0 | 0 | 0   | 0 | 0 | 0 | 0 | 0 | 0 | i = ' (2.4-2.7]'  |
| 1     | 0 | 0 | 0 | 0   | 0 | 0 | 0 | 0 | 0 | 0 | j = ' (2.7-inf)'  |

Afterwards I rand the SimpleCart against Age attribute. A gigantic tree :

```
=== Run information ===
```

=== Classifier model (full training set) ===

CART Decision Tree

```
Serv-Class=(' (4.5-5) ) | (' (2.5-3) ): ' (-inf-11.3) ' (120.0/17.0)
Serv-Class!=(' (4.5-5) ) | (' (2.5-3) )
| | Record Count=(' (39.4-44.2) ) | (' (34.6-39.4) ) | (' (29.8-34.6) ) | (' (44.2-inf) ) | (' (25-29.8) ) | (' (20.2-25) ) | (' (15.4-20.2) ) | (' (10.6-15.4) )
| | | Record Count=(' (39.4-44.2) ) | (' (34.6-39.4) ) | (' (29.8-34.6) ) | (' (44.2-inf) ) | (' (25-29.8) )
| | | PatientID=(' (11700-14039.4) ) | (' (7021.2-9360.6) ) | (' (21057.6-inf) ) | (' (4681.8-7021.2) ) | (' (-inf-2342.4) ) | (' (9360.6-11700) ) | (' (16378.8-18718.2) ) | (' (14039.4-16378.8) ) | (' (18718.2-21057.6) ): ' (33.9-45.2) ' (77.0/15.0)
| | | PatientID!=(' (11700-14039.4) ) | (' (7021.2-9360.6) ) | (' (21057.6-inf) ) | (' (4681.8-7021.2) ) | (' (-inf-2342.4) ) | (' (9360.6-11700) ) | (' (16378.8-18718.2) ) | (' (14039.4-16378.8) ) | (' (18718.2-21057.6) ): ' (22.6-33.9) ' (7.0/3.0)
| | | Record Count!=(' (39.4-44.2) ) | (' (34.6-39.4) ) | (' (29.8-34.6) ) | (' (44.2-inf) ) | (' (25-29.8) )
| | | Admit-Dx-Code=(' (10068.1-20048.2) ) | (' (79928.8-89908.9) ) | (' (49988.5-59968.6) ) | (' (-inf-10068.1) ) | (' (69948.7-79928.8) ) | (' (40008.4-49988.5) )
| | | PatientID=(' (11700-14039.4) ) | (' (7021.2-9360.6) ) | (' (21057.6-inf) ) | (' (18718.2-21057.6) ) | (' (4681.8-7021.2) ) | (' (14039.4-16378.8) )
| | | Region-ID=(C) | (L) | (H) | (I): ' (67.8-79.1) ' (104.0/122.0)
| | | Region-ID!=(C) | (L) | (H) | (I)
| | | Hospital-ID=(' (97.2-121) ) | (' (121-144.8) ) | (' (168.6-192.4) ) | (' (144.8-168.6) ) | (' (-inf-25.8) ) | (' (73.4-97.2) ) | (' (216.2-inf) ) | (' (25.8-49.6) ) | (' (192.4-216.2) )
| | | | Cost Weight < 3.62
| | | | Principal-Dx-Code=(' (20009-29994) ) | (' (89904-inf) ) | (' (29994-39979) ) | (' (69934-79919) ): ' (33.9-45.2) ' (16.0/23.0)
| | | | Principal-Dx-Code!=(' (20009-29994) ) | (' (89904-inf) ) | (' (29994-39979) ) | (' (69934-79919) )
| | | | Admit-Source=(' (8.2-inf) ) | (' (5.8-6.6) ) | (' (3.4-4.2) ) | (' (-inf-1.8) )
| | | | Patient-Sex=(F) : ' (67.8-79.1) ' (7.0/13.0)
| | | | Patient-Sex!=(F) : ' (45.2-56.5) ' (11.0/6.0)
| | | | Admit-Source!=(' (8.2-inf) ) | (' (5.8-6.6) ) | (' (3.4-4.2) ) | (' (-inf-1.8) ): ' (56.5-67.8) ' (85.0/70.0)
| | | | Cost Weight >= 3.62: ' (67.8-79.1) ' (17.0/12.0)
| | | | Hospital-ID!=(' (97.2-121) ) | (' (121-144.8) ) | (' (168.6-192.4) ) | (' (144.8-168.6) ) | (' (-inf-25.8) ) | (' (73.4-97.2) ) | (' (216.2-inf) ) | (' (25.8-49.6) ) | (' (192.4-216.2) )
| | | | PatientID!=(' (11700-14039.4) ) | (' (7021.2-9360.6) ) | (' (21057.6-inf) ) | (' (18718.2-21057.6) ) | (' (-inf-2342.4) ) | (' (2342.4-4681.8) ) | (' (9360.6-11700) ) | (' (16378.8-18718.2) )
| | | | Patient-Ethnicity=(' (1.8-2.6) ) | (' (2.6-3.4) ) | (' (3.4-4.2) ) | (' (4.2-5) ) | (' (5-5.8) ) | (' (5.8-6.6) ) | (' (6.6-7.4) ) | (' (7.4-8.2) )
| | | | Patient-Sex=(F)
| | | | Cost Weight < 3.23: ' (56.5-67.8) ' (35.0/13.0)
| | | | Cost Weight >= 3.23: ' (67.8-79.1) ' (10.0/3.0)
| | | | Patient-Sex!=(F)
| | | | PatientID=(' (18718.2-21057.6) ): ' (45.2-56.5) ' (12.0/1.0)
| | | | PatientID!=(' (18718.2-21057.6) )
| | | | Reimb DRG=(' (447.4-503.2) ) | (' (391.6-447.4) ) | (' (-inf-56.8) ): ' (33.9-45.2) ' (6.0/3.0)
| | | | Reimb DRG!=(' (447.4-503.2) ) | (' (391.6-447.4) ) | (' (-inf-56.8) ): ' (67.8-79.1) ' (6.0/6.0)
| | | | Patient-Ethnicity!=(' (1.8-2.6) ) | (' (2.6-3.4) ) | (' (3.4-4.2) ) | (' (4.2-5) ) | (' (5-5.8) ) | (' (5.8-6.6) ) | (' (6.6-7.4) ) | (' (7.4-8.2) )
| | | | Serv-Class=(' (5.5-inf) ) | (' (1.5-2) )
| | | | PatientID=(' (21057.6-inf) ): ' (33.9-45.2) ' (10.0/1.0)
| | | | PatientID!=(' (21057.6-inf) ): ' (45.2-56.5) ' (12.0/0.0)
| | | | Serv-Class!=(' (5.5-inf) ) | (' (1.5-2) ): ' (67.8-79.1) ' (24.0/6.0)
| | | | PatientID!=(' (11700-14039.4) ) | (' (7021.2-9360.6) ) | (' (21057.6-inf) ) | (' (18718.2-21057.6) ) | (' (-inf-2342.4) ) | (' (2342.4-4681.8) ) | (' (9360.6-11700) ) | (' (16378.8-18718.2) ): ' (67.8-79.1) ' (44.0/32.0)
| | | | PatientID!=(' (11700-14039.4) ) | (' (7021.2-9360.6) ) | (' (21057.6-inf) ) | (' (18718.2-21057.6) ) | (' (4681.8-7021.2) ) | (' (14039.4-16378.8) )
| | | | PatientID=(' (9360.6-11700) ) | (' (2342.4-4681.8) )
| | | | Region-ID=(C) | (H) | (L) | (I) | (D) | (K) | (M) | (E) | (F) | (J)
| | | | Patient-Ethnicity=(' (8.2-inf) ) | (' (1.8-2.6) ) | (' (2.6-3.4) ) | (' (3.4-4.2) ) | (' (4.2-5) ) | (' (5-5.8) ) | (' (5.8-6.6) ) | (' (6.6-7.4) ) | (' (7.4-8.2) )
| | | | Region-ID=(C) | (H) | (L) | (I) | (D) | (J) | (G)
| | | | Hospital-ID=(' (97.2-121) ) | (' (121-144.8) ) | (' (168.6-192.4) ) | (' (144.8-168.6) ) | (' (192.4-216.2) ) | (' (216.2-inf) ) | (' (25.8-49.6) ) | (' (49.6-73.4) )
| | | | Patient-Sex=(F) : ' (56.5-67.8) ' (7.0/2.0)
| | | | Patient-Sex!=(F)
| | | | Nosocomial Inf=(' (0.9-inf) ): ' (45.2-56.5) ' (6.0/1.0)
| | | | Nosocomial Inf!=(' (0.9-inf) ): ' (79.1-90.4) ' (21.0/10.0)
| | | | Hospital-ID!=(' (97.2-121) ) | (' (121-144.8) ) | (' (168.6-192.4) ) | (' (144.8-168.6) ) | (' (192.4-216.2) ) | (' (216.2-inf) ) | (' (25.8-49.6) ) | (' (49.6-73.4) ): ' (45.2-56.5) ' (19.0/16.0)
| | | | Region-ID!=(C) | (H) | (L) | (I) | (D) | (J) | (G): ' (56.5-67.8) ' (36.0/22.0)
| | | | Patient-Ethnicity!=(' (8.2-inf) ) | (' (1.8-2.6) ) | (' (2.6-3.4) ) | (' (3.4-4.2) ) | (' (4.2-5) ) | (' (5-5.8) ) | (' (5.8-6.6) ) | (' (6.6-7.4) ) | (' (7.4-8.2) )
| | | | Region-ID=(E) | (I) | (M) | (J) | (G) | (H) | (L) | (D) | (K): ' (79.1-90.4) ' (17.0/5.0)
| | | | Region-ID!=(E) | (I) | (M) | (J) | (G) | (H) | (L) | (D) | (K): ' (33.9-45.2) ' (15.0/0.0)
```

This tree would go on and on for a while. It ends as shown below:

```
| | | | | | PatientID!=('18718.2-21057.6'])
| | | | | | PatientID= ('(21057.6-inf)'): '(67.8-79.1)' (25.0/23.0)
| | | | | | PatientID!= ('(21057.6-inf)'): '(45.2-56.5)' (50.0/71.0)
| | | | | PatientID!= ('(11700-14039.4)') | ('(7021.2-9360.6)') | ('(21057.6-inf)') | ('(18718.2-21057.6)')
| | | | | Region-ID=(E) | (F) | (G) | (J) | (C) | (H) | (I) | (L) | (D) | (K): '(67.8-79.1)' (201.0/336.0)
| | | | | Region-ID!=(E) | (F) | (G) | (J) | (C) | (H) | (I) | (L) | (D) | (K)
| | | | | PatientID= ('(-inf-2342.4)') | ('(14039.4-16378.8)') | ('(7021.2-9360.6)') | ('(11700-14039.4)') | ('(18718.2-21057.6)') | ('(21057.6-inf)'): '(56.5-67.8)' (41.0/49.0)
| | | | | PatientID!= ('(-inf-2342.4)') | ('(14039.4-16378.8)') | ('(7021.2-9360.6)') | ('(11700-14039.4)') | ('(18718.2-21057.6)') | ('(21057.6-inf)'): '(67.8-79.1)' (30.0/39.0)
```

Number of Leaf Nodes: 263

Size of the Tree: 525

Time taken to build model: 2609.19 seconds

=== Stratified cross-validation ===

=== Summary ===

|                                  |           |          |
|----------------------------------|-----------|----------|
| Correctly Classified Instances   | 11212     | 37.387 % |
| Incorrectly Classified Instances | 18777     | 62.613 % |
| Kappa statistic                  | 0.1207    |          |
| Mean absolute error              | 0.145     |          |
| Root mean squared error          | 0.2729    |          |
| Relative absolute error          | 94.9279 % |          |
| Root relative squared error      | 98.7579 % |          |
| Total Number of Instances        | 29989     |          |

=== Detailed Accuracy By Class ===

|               | TP Rate | FP Rate | Precision | Recall | F-Measure | ROC Area | Class          |
|---------------|---------|---------|-----------|--------|-----------|----------|----------------|
|               | 1       | 0.001   | 0.876     | 1      | 0.934     | 1        | '(-inf-11.3)'  |
|               | 0.094   | 0       | 0.5       | 0.094  | 0.159     | 0.834    | '(11.3-22.6)'  |
|               | 0.098   | 0.001   | 0.591     | 0.098  | 0.169     | 0.744    | '(22.6-33.9)'  |
|               | 0.125   | 0.005   | 0.486     | 0.125  | 0.199     | 0.734    | '(33.9-45.2)'  |
|               | 0.06    | 0.012   | 0.317     | 0.06   | 0.102     | 0.654    | '(45.2-56.5)'  |
|               | 0.167   | 0.083   | 0.302     | 0.167  | 0.215     | 0.606    | '(56.5-67.8)'  |
|               | 0.497   | 0.396   | 0.363     | 0.497  | 0.419     | 0.572    | '(67.8-79.1)'  |
|               | 0.562   | 0.384   | 0.396     | 0.562  | 0.464     | 0.625    | '(79.1-90.4)'  |
|               | 0.014   | 0.003   | 0.237     | 0.014  | 0.027     | 0.689    | '(90.4-101.7)' |
|               | 0       | 0       | 0         | 0      | 0         | 0.685    | '(101.7-inf)'  |
| Weighted Avg. | 0.374   | 0.258   | 0.359     | 0.374  | 0.335     | 0.619    |                |

=== Confusion Matrix ===

|     | a  | b  | c   | d   | e   | f    | g    | h  | i | j | <-- classified as  |
|-----|----|----|-----|-----|-----|------|------|----|---|---|--------------------|
| 120 | 0  | 0  | 0   | 0   | 0   | 0    | 0    | 0  | 0 | 0 | a = '(-inf-11.3)'  |
| 17  | 13 | 4  | 3   | 2   | 47  | 27   | 25   | 0  | 0 | 0 | b = '(11.3-22.6)'  |
| 0   | 5  | 26 | 27  | 6   | 55  | 89   | 56   | 0  | 0 | 0 | c = '(22.6-33.9)'  |
| 0   | 0  | 10 | 134 | 28  | 176 | 464  | 258  | 1  | 0 | 0 | d = '(33.9-45.2)'  |
| 0   | 0  | 0  | 33  | 152 | 407 | 1138 | 781  | 3  | 0 | 0 | e = '(45.2-56.5)'  |
| 0   | 2  | 4  | 32  | 93  | 882 | 2465 | 1765 | 24 | 0 | 0 | f = '(56.5-67.8)'  |
| 0   | 3  | 0  | 31  | 104 | 719 | 4645 | 3811 | 28 | 0 | 0 | g = '(67.8-79.1)'  |
| 0   | 3  | 0  | 15  | 88  | 529 | 3387 | 5212 | 33 | 0 | 0 | h = '(79.1-90.4)'  |
| 0   | 0  | 0  | 1   | 6   | 107 | 593  | 1253 | 28 | 0 | 0 | i = '(90.4-101.7)' |
| 0   | 0  | 0  | 0   | 0   | 0   | 4    | 14   | 1  | 0 | 0 | j = '(101.7-inf)'  |

The classification ran for the longest time. Did not have enough time to experiment enough to find an interesting classification tree. Some of them crashed Weka due to memory overload even though I allocate 1524mb.